

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 05-003183

(43)Date of publication of application : 08.01.1993

(51)Int.Cl.

H01L 21/304

H01L 21/321

(21)Application number : 03-153650

(71)Applicant : NEC CORP

(22)Date of filing : 26.06.1991

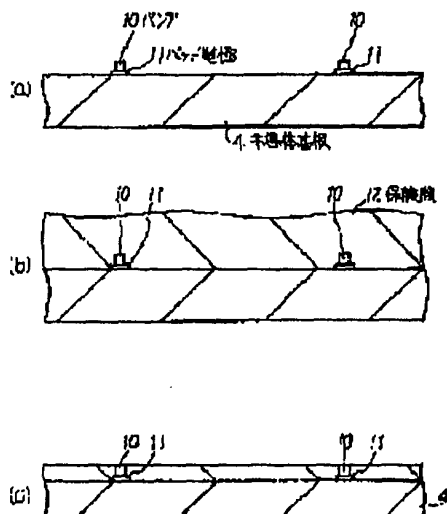
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## (54) SEMICONDUCTOR DEVICE AND MANUFACTURE THEREOF

### (57)Abstract:

PURPOSE: To enable a semiconductor substrate to be enhanced in mechanical strength and lessened in thickness by a method wherein a protective film is provided to the semiconductor substrate to cover its surface including the side faces of bumps provided to pad electrodes, and the upside of the protective film is set level with those of the bumps so as to enable the upsides of the bumps to be exposed.

CONSTITUTION: Pad electrodes 11 electrically connected to the outside are provided onto a semiconductor substrate 4 where semiconductor elements are formed, a metal film of Ti or the like is formed on the surface of the substrate 4 including the pad electrodes 11, the pad electrodes 11 are selectively plated with Au or the like making the metal film serve as a plating electrode, then the metal film is removed, and bumps 10 are formed. Then, a protective film 12 of epoxy resin or the like is applied onto all the surface of the substrate 4 including the bumps 10 as thick as  $200\mu\text{m}$  and then cured. In succession, the semiconductor substrate 4 is rendered as thin as  $200\mu\text{m}$  or so by grinding its rear side, and furthermore the protective film 12 is etched back to be as thin as  $20\mu\text{m}$  or so to make the upsides of the bumps 10 exposed.



## LEGAL STATUS

[Date of request for examination] 30.06.1995

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 2701589

[Date of registration] 03.10.1997

[Number of appeal against examiner's decision of rejection]